



MEMORANDUM

Date: August 10, 2017
To: Board of Park Commissioners
From: Joelle Hammerstad, Sustainability & Environmental Performance Manager
Subject: 2017 Update on Water Use

Requested Board Action

Seattle Parks and Recreation (SPR) is one of the largest consumers of potable water in the City of Seattle. Our peak season water use is May through September. This is an informational briefing about SPR's water use so far this year, conservation efforts and water use in the larger context of our Environmental Agenda. No decision is requested.

Background

Seattle Parks and Recreation has been an active partner with Seattle Public Utilities in conserving water for many decades; however, in the past 10 years, we have focused the majority of our conservation efforts on irrigation.

SPR uses approximately 224 million gallons of water each year. About 75 percent of that is used for irrigation. Of the 6,400 acres SPR manages, less than 10 percent – about 600 acres – is irrigated. In general, we irrigate from mid-May to mid-September; although, that varies from year to year, depending on the weather.

While the City's population continues to increase, our water consumption has basically stayed the same. In 2010, our per capita water use was 368 gallons. In 2017, that number is 320 gallons.

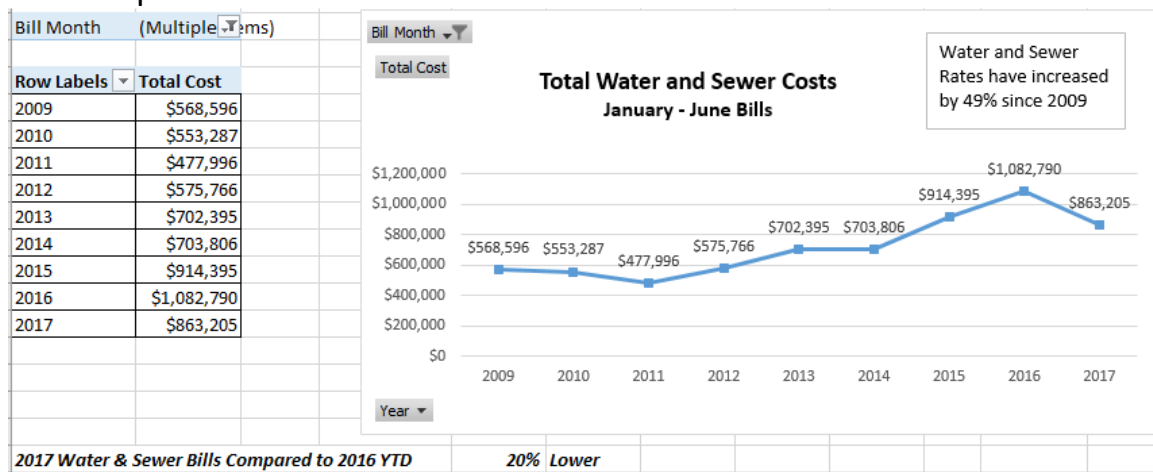
2017 Seasonal Water Use

As August 8, Seattle has not had rain in 52 days – a record-setting dry spell. For an organization that uses most of our water during the summer months, this is an important development.

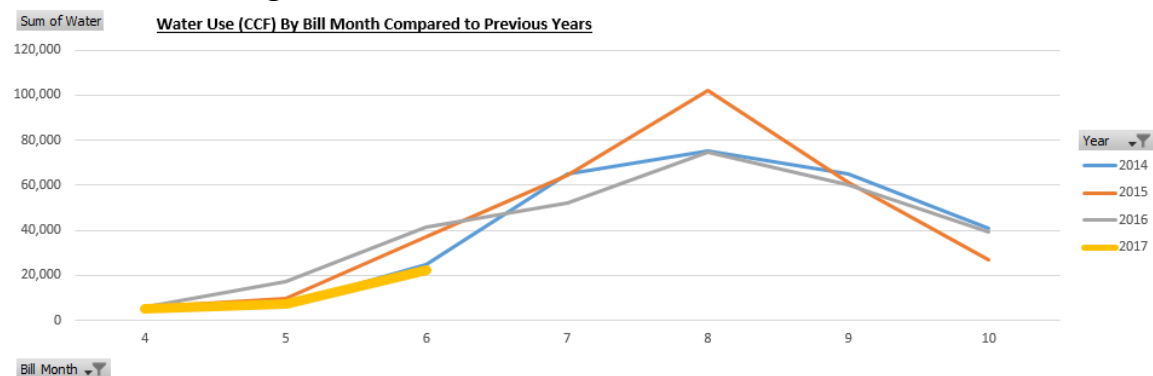
Our SPU billing cycle comes in two-month increments, and we have not received our July/August billing data; however, as of the end of June, our water costs were slightly below the three-year average – despite a water/sewer rates increase by 49 percent since 2009.

Our total water/sewer billing through the end of June was \$863,000. The average of our water/sewer bills during the same period over the previous three years was \$901,000. (See graphic below.) Because of our early savings, we believe that in spite of a long dry spell, our costs will be at normal levels through the end of the year.

Total Department Water and Sewer Costs



Water bills through June



Because we track our water use based on data provided by SPU, and we don't get our water bills for July and August until after the peak season, we rely heavily on historical data to guide us through the hottest, driest months.

We have more than a decade of detailed water use data. We can analyze the data by park, year and consumption amount. Water Manager Karen Galt uses the data to create a visual picture of water use, which she then analyzes, flagging the sites where water is higher than expected. She shares this data with crew chiefs, gardeners and other in-the-field personnel. They strategize what may be causing high water use and problem solve together.

In addition, we use computerized smart sprinklers and irrigation controllers. Instead of relying on old-fashioned timers, our irrigation system uses cell phone technology to draw data from sensors and weather forecasts. Our computerized irrigation system measures how much water is needed for any given landscape and turns water on and off at precise times.

Proper operation of irrigation systems is an important foundation of our water management practices. Just this year, we developed a new online training for staff in the field on Irrigation Best Management Practices (BMPs). This online training marks the first time we have employed standardized training on irrigation BMPs.

With the seasonal nature of temporary staff who work in the field, and the resulting high turnover in this group of employees, it is important to have a consistent message on irrigation management. The on-demand nature of the online content means that the training reaches all staff in a uniform way.

Environmental Sustainability

Our department strives to be at the front of sustainability practices. Harnessing resources that are infinitely available, naturally occurring, constant and free is a cornerstone of what we do.

These are just some of the innovations we employ.

- *Rain catchment for irrigation.* We installed our first underground rainwater catchment system under the lawn at the Northgate Community Center and Library, which opened in 2007. Rainwater captured in the Olympic-swimming-pool-sized cistern holds 2.5 million gallons of rainwater. It is held until summer, and used for irrigation. (what results have you seen from this?)
- *Drip irrigation for grass.* This spring we installed and began testing a sub-surface drip irrigation system for grass at Kubota Garden. The highly efficient system uses buried tubes that slowly emit moisture over time, which saves water by eliminating surface water evaporation.
- *Water Shortage Contingency Plan.* Seattle Parks and Recreation has a very mature, well-thought and thoroughly tested Water Shortage Contingency Plan (WSCP). We developed the plan in 1999, and updated it in 2010. In the summer of 2012, we implemented the plan so that we could test its strengths and weaknesses. Based on the information we learned then, we were ready to jump into action in 2015, when SPU implemented water restrictions because of drought.

Additional Information

Just this month, the Office of Sustainability & the Environment released its latest [Preparing for Climate Change](#) report. The report clearly states that “all scenarios show warming” of the Seattle area.

Analysis by Seattle City Light found that the Seattle metropolitan area is likely to see 18 additional days (+/- 6 days) of temperatures above 86 degrees Fahrenheit by the 2050s.

The report goes on to state that:

Warmer winter temperatures are expected to lead to lower winter snowpack and higher (and earlier) peak streamflows...[t]hese changes simultaneously increase the risk of flooding and drought, and will require more active management of water resources to meet objectives for people and the environment.

SPR has always been a leader on sustainability, and will need to become even more innovative and creative around water use as we face the challenges of climate change in the 21st Century.